

U.S. Patent Application Serial No.: 10/531,075

Response filed March 18, 2011

Reply to OA dated October 22, 2010

REMARKS

Claims 1, 6, and 7 are currently pending in the subject application. Claim 1 has been amended herein in order to more particularly point out and distinctly claim subject matter. The Applicant respectfully submits that no new matter has been added. It is believed that this paper is fully responsive to the Office Action dated October 22, 2010.

The Examiner has rejected claims 1, 6, and 7 under U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,518,810 (Nishihara) in view of U.S. Patent No. 6,319,613 (Takeda) or U.S. Patent No. 6,620,872 (Fisher).

Applicant respectfully traverses this rejection, for the following reasons.

There are substantial, important differences between the art relied upon by the Examiner and the combinations of features as set forth in the claims.

The U.S. Patent and Trademark Office has the burden of proof to show that an applicant is not entitled to a patent if the claimed subject matter is anticipated by, or is obvious from, the art of record. A patent applicant is entitled to a patent unless the U.S. Patent and Trademark Office establishes otherwise.

Response filed March 18, 2011

Reply to OA dated October 22, 2010

The Examiner has alleged that "LaB₆ fine particles are functionally equivalent infrared-ray cutoff or IR absorbing particles to ITO particles" (Office Action dated October 22, 2010, p.3, lines 10-11).

Applicant respectfully disagrees with the Examiner's allegation, for the following reasons.

Specifically, as can be seen from the description: "The hexaboride has such high power to cut off heat radiation per unit weight that its use is effective in an amount not greater than one-tenth of the amount required of ITO or ATO" in Column 4, lines 3 to 5 of **Takeda**, the power to cut off heat radiation of LaB₆ fine particles is approximately ten times or more greater than that of ITO fine particles. Hence, LaB₆ fine particles are not functionally equivalent infrared-ray cutoff or IR absorbing particles to ITO particles.

In addition, the fact that LaB₆ fine particles are not functionally equivalent infrared-ray cutoff or IR absorbing particles to ITO particles is confirmed by comparing "Example 7" according to the invention of this application with "Example 6" of **Nishihara**, in each of which a "polyvinyl chloride resin" was employed.

Specifically, in "Example 7" according to the invention of this application, the percentage of the "lanthanum hexaboride particles" blended in the film having a thickness of 50 µm was "0.005 Kg/(0.005 Kg + 6.7 Kg) = 0.00074 x 100 = 0.074% by weight." Meanwhile, in

U.S. Patent Application Serial No.: 10/531,075

Response filed March 18, 2011

Reply to OA dated October 22, 2010

"Example 6" of **Nishihara**, the percentage of the "ITO particles" blended in the film having a thickness of from 70 to 100 μm was " $10 \text{ g}/(10 \text{ g} + 200 \text{ g}) = 0.476 \times 100 = \underline{4.76\% \text{ by weight}}$."

Accordingly, LaB₆ fine particles are not functionally equivalent infrared-ray cutoff or IR absorbing particles to ITO particles. Therefore, the Examiner's allegation in the Office Action is improper.

Moreover, since the heat shielding material for an agricultural and horticultural facility, comprising LaB₆ fine particles employed therein of the invention of this application has at least the following prominent effects and is not described, taught, or suggested by **Nishihara** in view of **Takeda and Fisher**, the Examiner is requested to withdraw the rejection of claims.

As can be seen from the description on Page 9, Lines 23 to Page 10, Line 9 in the English description, the "heat shielding material" for an agricultural and horticultural facility comprising LaB₆ fine particles as a filler of the invention of this application has at least the following three features, and thus achieves at least an effect of a stable harvest of plants to be grown. Specifically, the "heat shielding material for an agricultural and horticultural facility":

has a heat shielding characteristic by virtue of its efficient screening of sunlight in a near-infrared region;

can hold sufficient brightness inside the facility by virtue of its good transmittance characteristic in a visible light region around the vicinity of a wavelength of 550 nm; and

Response filed March 18, 2011

Reply to OA dated October 22, 2010

is characteristic in that it transmits ultraviolet light, at a wavelength of 320 nm or below, whereby honeybees, etc., which contribute to the pollination, can do active work.

In addition, as can be seen from the description on Page 9, Lines 4 to 7 in the English description: "the transmittance of ultraviolet light at a wavelength of 290 to 320 nm can be controlled by adjusting the amount of the LaB₆ fine particles to be added to the substrate resin," the "heat shielding material for an agricultural and horticultural facility" achieves a prominent effect that the "transmittance of ultraviolet light" can be controlled only by adjusting "the amount of the LaB₆ fine particles to be added to the substrate resin."

Here, the fact that the "transmittance of ultraviolet light" can be controlled only by adjusting "the amount of the LaB₆ fine particles to be added to the substrate resin" can be confirmed by the "transmittance spectra of films having fine particles of LaB₆ dispersed therein" shown in Fig. 1 of this application, and the "transmittance spectra of films having fine particles of ATO dispersed therein" shown in Fig. 2 of this application.

Specifically, according to the "transmittance spectrum of the film represented by the upper profile" where the LaB₆ fine particles dispersed therein were contained in a smaller weight per 1 m², this film had a transmittance in an ultraviolet region around a wavelength of 200 nm. On the other hand, according to the "transmittance spectrum of the film represented by the lower profile" where the LaB₆ fine particles dispersed therein were contained in a larger weight per 1

U.S. Patent Application Serial No.: 10/531,075

Response filed March 18, 2011

Reply to OA dated October 22, 2010

m^2 , this film does not have a transmittance in an ultraviolet region around a wavelength of 200 nm.

Next, the "transmittance spectra of films having fine particles of ATO dispersed therein" shown in Fig. 2 of this application is discussed. According to "the transmittance spectra of the dispersion films represented by upper and lower profiles," neither of the films have a transmittance in an ultraviolet region around a wavelength of 200 nm, irrespective of the weight of fine particles of ATO per 1 m^2 .

As described above, the "heat shielding material for an agricultural and horticultural facility, comprising LaB₆ fine particles employed therein" has at least the prominent effects that the "transmittance of ultraviolet light" can be controlled only by adjusting "the amount of the LaB₆ fine particles to be added to the substrate resin."

As described above, LaB₆ fine particles are not functionally equivalent infrared-ray cutoff or IR absorbing particles to ITO particles. Accordingly, the Examiner's allegation has no support and thus is improper.

As described above, since the "heat shielding material for an agricultural and horticultural facility, comprising LaB₆ fine particles employed therein" has at least the prominent effects as noted above and is not described, taught, or suggested by Nishihara in view of Takeda and Fisher, the Examiner is respectfully requested to withdraw this rejection.

Response filed March 18, 2011

Reply to OA dated October 22, 2010

Nishihara, Takeda, and Fisher, alone or in combination, fail to describe, teach, or suggest the combination of features as set forth in claim 1 including at least the following features: “A heat shielding material for an agricultural and horticultural facility, comprising: a heat shield layer comprising a substrate resin and a heat shield filler in the form of particles kneaded in said substrate resin, ... said heat shield filler in said heat shield layer is lanthanum hexaboride.”

Nishihara, Takeda, and Fisher, alone or in combination, fail to describe, teach, or suggest the combination of features as set forth in claim 1, as amended, including at least the following features: “wherein said heat shielding material for an agricultural and horticultural facility has an ultraviolet light transmittance at a wavelength of 290 to 320 nm.”

Accordingly, in view of the above remarks and amendments, Applicant respectfully submits that this rejection of claim 1 should be withdrawn.

Claims 6 and 7 depend from claim 1. It is submitted that this rejection of claims 6 and 7 should be withdrawn by virtue of their dependency.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the Applicant’s undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

U.S. Patent Application Serial No.: **10/531,075**

Response filed March 18, 2011

Reply to OA dated October 22, 2010

In the event that this paper is not timely filed, the Applicant respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosure: Petition for Extension of Time